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EXAMINER

NG, FAN

ART UNIT	PAPER NUMBER
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4145

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,993	Applicant(s) AREDDU ET AL.	
	Examiner FAN NG	Art Unit 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-38 and 42-44 is/are rejected.
- 7) ☒ Claim(s) 39-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/02/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:
 - a. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
2. Claim 23 is rejected under 35 U.S.C. 101 because there is not physical structure to perform the method steps. Consequently, the steps are trade as abstract ideas, and could be perform mentally.
3. Claims 24-32 are rejected under 35 U.S.C. 101 because claim 23 is being rejected, therefore all its dependent claims are rejected also.
4. Claim 44, is being rejected under 35 USC 101, because of a computer program is not statutory, furthermore, the word "capable" is intended use and it doesn't has to be in the memory.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to number or a brief description of each box as described in the specification. Any structural detail

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that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claim 23 is objected to because of the following informalities: There are two “at” in the claim, ...traffic dispersion at lest one ... Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 23-25 27-28, 32, 33-35, 37-38, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peleg (US 2004/0042398) in view of Duffield (US 6873600).

9. As per claim 23, (New) **Peleg teaches** A method for evaluating traffic dispersion at least one exchange in a communications network, the exchange being arranged for applying a set of routing rules in selectively allotting to a plurality of links incoming traffic directed toward a given destination, comprising the steps of:

10.

11. ... the distribution thus obtained being statistically representative of the dispersion of said incoming traffic **([0139] :computer the statistical measure of the traffic, see Fig. 3A and [0147] shows that incoming traffics are measures at #170)** over said plurality of links at said exchange **(Fig. 3A, shows plurality and at the exchange #170).**

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12. **Peleg doesn't teach** incrementally generating traffic quantums representative of said traffic and producing a distribution of said traffic quantums over said links in said plurality according to said set of routing rules...

13.

14. **But Duffield teaches** incrementally generating traffic quantums representative of said traffic (col. 3, line 44-51 and please refer to Fig. 11 (sampling subsystem):

here the labels are the traffic quantums, because they both represent the

incoming traffic. The label is also incrementally generated, since in line 46-47:

generate a packet label for each sampled packet, so the more sampled packet

coming in, the more labels will be generate); and producing a distribution of said

traffic quantums (Fig. 5B: is producing a distribution of labels to represent traffic,

note as above described traffic quantum is the same as labels) over said links in

said plurality according to said set of routing rules (col. 2, line 45-48: In order to infer

how ... routing protocol (rules) and link states has to be available. So the routing

rules is necessary to have, therefore the measurement is according to routing

rules),

15. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Duffield's idea into Peleg talk about the measured traffic can be represent in a statistical way, and Duffield suggest producing a distribution of the traffic, the benefit is to give network engineering a clear picture when the traffic is heavy and what time is light, this help network engineering analysis the network.

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16. As per claim, 24, **Peleg and Duffield teaches** (New) The method of claim 23, comprising the steps of:

17. **Peleg teaches** measuring the volume of said incoming traffic directed toward said given destination (**Fig. 13, #1100: computer the unutilized the capacity is the same as measuring the incoming traffic, since must first know the incoming traffic than the capacity can be calculated**); and generating said traffic quantum (**Fig. 13 #1130**) by subdividing said measured traffic volume by a given number of loop steps (**Fig. 13, #1130: free capacity divided by number of links**).

18. As per claim 25, (New) **Peleg and Duffield teaches** The method of claim 23, comprising the steps of:

19. **Peleg teaches** determining, for each link in said plurality (**Fig. 3A, #170 is a measuring module, also show in [0147] with plurality of link**), a number of call attempts (**Fig 1, #100: traffic load**) and a corresponding number of seizures (**reserved capacity**). if said number of call attempts equals said number of seizures (**[0160]: here traffic load is the call attempts, and reserved capacity are number of seizures**), setting a load limit for applying said set of routing rules for said link equal to the number of circuits available in the link (**[0160]: the load limit is the reserved capacity, and the routing rules is not to change the unreservable capacity and it is simply remains zero. Note, in case of unreservable capacity equal to zero, the reserved capacity (number of circuits available) equal the traffic load (number of call attempts)**); and

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if said number of call attempts is greater than said respective number of seizures (**Fig. 1, #100, when traffic load (number of call attempts) greater than reserved capacity (number of seizures) go to #110**), setting said load limit equal to the outgoing traffic volume measured by the exchange on said link (**Fig. 1, #110, set the unreservable capacity equal to the extra traffic, so together reservable and unreservable capacity equal to the outgoing traffic, and which is measured by #110**).

20. As per claim 27 **Peleg and Duffield teach** (New) the method of claim 25, comprising the steps of:

21. **Pelege teaches** selecting within said network at least a first exchange receiving traffic from at least a second and a third exchange (**Fig. 3A, #170 is the first exchange, it receive traffic from link e1 and e2 can be consider as second and third exchange**); and obtaining, based on respective distributions of said quantum of traffic generated at said second and third exchanges (**[0147]: obtaining the distributions of quantum of traffic 18 from link e1 and 12 from link e2**), traffic dispersion data indicative of:

the traffic (TVm_{xp}) incoming into said first exchange from said second exchange (**[0147]: traffic 18 is obtain from second exchange**); and the traffic (TVn_{xr}) incoming into said first exchange from said third exchange (**[0147]: traffic 12 is obtain from third exchange**).

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22. As per claim 28, **Peleg and Duffield teach** (New) The method of claim 27,

23. **Peleg teaches** comprising the step of obtaining, based on respective distributions of said quantum of traffic ([0147]: **base on the distribution traffic obtain from link e1 (second), link e2 (third) and link e3**), distribution data representative of the traffic toward a given destination generated at said first exchange different from traffic (TVmxp, TVnrx) incoming from said second and third exchanges ([0148] and Fig. 1, #110, #120, Fig. 2A, #140. if the actual traffic load is different from the reserved capacity, First exchange will allocate new capacity to each link. Note, distribution data representative of the traffic is the same as capacity representative of the traffic, see [0147]: measurement of the traffic ... 16, 12, 8 ... and 18, 12, 9 units in fact in use).

24. As per claim 32, **Peleg and Duffield teach** (New) the method of claim 23,

25. **Peleg doesn't teaches** wherein said steps of incrementally generating traffic quantum representative of said traffic and producing a distribution of said traffic quantum are performed in the absence of interference with operation of said communications network.

26. **Duffield teaches** wherein said steps of incrementally generating traffic quantum representative of said traffic (col. 3, line 44-51 and please refer to Fig. 11 (sampling subsystem): here the labels are the traffic quantum, because they both

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represent the incoming traffic. The label is also incrementally generated, since in line 46-47: generate a packet label for each sampled packet, so the more sampled packet coming in, the more labels will be generate) and producing a distribution of said traffic quantum (Fig. 5B: **is producing a distribution of labels to represent traffic, note as above described traffic quantum is the same as labels**) are performed in the absence of interference with operation of said communications network (Fig. 11, **the input buffer #1120 and sampling system #1130 are in different path thus no interference or delay**).

27. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Duffield's idea into Peleg talk about the measured traffic can be represent in a statistical way, and Duffield suggest producing a distribution of the traffic, the benefit is to give network engineering a clear picture when the traffic is heavy and what time is light, this help network engineering analysis the network.

28. As per claim 33, (New) **Peleg teaches** A system for evaluating traffic dispersion at least one exchange in a communications network, the exchange being arranged for applying a set of routing rules in selectively allotting to a plurality of links incoming traffic directed toward a given destination, comprising an evaluation module configured for:

29. **Peleg teaches** ... the distribution thus obtained being statistically representative of the dispersion of said incoming traffic ([0139] :**computer the statistical measure of**

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the traffic, see Fig. 3A and [0147] shows that incoming traffics are measures at #170) over said plurality of links at said exchange (Fig. 3A, shows plurality and at the exchange #170).

30. **Peleg doesn't teach** incrementally generating traffic quantum representative of said traffic and producing a distribution of said traffic quantum over said links in said plurality according to said set of routing rules...

31. **Duffield teaches** incrementally generating traffic quantum representative of said traffic (col. 3, line 44-51 and please refer to Fig. 11 (sampling subsystem): **here the labels are the traffic quantum, because they both represent the incoming traffic. The label is also incrementally generated, since in line 46-47: generate a packet label for each sampled packet, so the more sampled packet resulting labels will be increase); and producing a distribution of said traffic quantum (Fig. 5B: is producing a distribution of labels to represent traffic, note as above described traffic quantum is the same as labels) over said links in said plurality according to said set of routing rules (col. 2, line 45-48: In order to infer how ... routing protocol (rules) and link states has to be available. So the routing rules is necessary to have, therefore the measurement is according to routing rules),...**

32. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Duffield's idea into Peleg talk about the measured

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traffic can be represent in a statistical way, and Duffield suggest producing a distribution of the traffic, the benefit is to give network engineering a clear picture when the traffic is heavy and what time is light, this help network engineering analysis the network.

33. As per claim 34, **Peleg and Duffield teach** (New) The system of claim 33, **Peleg teaches** comprising a measuring module for measuring the volume of said incoming traffic directed toward said given destination (**Fig. 13, #1100: computer the unutilized the capacity is the same as measuring the incoming traffic, since must first know the incoming traffic than the capacity can be calculated**), said evaluation module being configured for generating said traffic quantum (b) by subdividing the traffic volume measured by said measuring module by a given number of loop steps (**Fig. 13, #1130: free capacity divided by number of links**).

34. As per claim 35, **Peleg and Duffield teach** (New) the system of claim 33, comprising:

35. **Peleg teaches** a measuring module configured for determining , for each link in said plurality (**Fig. 3A, #170 is a measuring module, also show in [0147] with plurality of link**), a number of call attempts (**Fig 1, #100: traffic load**) and a corresponding number of seizures (**reserved capacity**); and a routing rules generating module for setting a load limit for applying said set of routing rules (**Fig. 1, #100, #110, #120 are routing rules, and reserved and unreserved capacity is the load limit**),

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said routing rules generating module being configured for: if said number of call attempts equals said number of seizures (**[[0160]: here traffic load is the call attempts, and reserved capacity are number of seizures**), setting a load limit for applying said set of routing rules for said link equal to the number of circuits available in the link (**[[0160]: the load limit is the reserved capacity, and the routing rules is not to change the unreservable capacity and it is simply remains zero. Note, in case of unreservable capacity equal to zero, the reserved capacity (number of circuits available) equal the traffic load (number of call attempts)**), and if said number of call attempts is greater than said respective number of seizures (**Fig. 1, #100, when traffic load (number of call attempts) greater than reserved capacity (number of seizures) go to #110**), setting said load limit equal to the outgoing traffic volume measured by said measuring module on said link (**Fig. 1, #110, set the unreservable capacity equal to the extra traffic, so together reservable and unreservable capacity equal to the outgoing traffic, and which is measured by #110**).

36. As per claim 37, **Peleg and Duffield teach** (New) The system of claim 33, **Pelege teaches** for use in a network comprising at least a first exchange receiving traffic from at least a second and a third exchange (**Fig. 3A, #170 is the first exchange, it receive traffic from link e1 and e2 can be consider as second and third exchange**), comprising at least one said evaluation module configured for: obtaining, based on respective distributions of said quantum of traffic generated at said second and third exchanges (**[[0147]: obtaining the distributions of quantum of**

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traffic 18 from link e1 and 12 from link e2), traffic dispersion data indicative of:
the traffic (TVm_{xp}) incoming into said first exchange from said second exchange
([0147]: traffic 18 is obtain from second exchange); and
the traffic (TVn_{xr}) incoming into said first exchange from said third exchange **([0147]:**
traffic 12 is obtain from third exchange).

37. As per claim 38, **Peleg and Duffield teach** (New) The system of claim 37,
Peleg teaches wherein said at least one evaluation module **(Fig. 1, #130 and Fig. 2A,**
#140) is configured for obtaining, based on respective distributions of said quantum of
traffic **([0147]: base on the distribution traffic obtain from link e1 (second), link e2**
(third) and link e3), distribution data representative of the traffic toward a given
destination generated at said first exchange different from traffic (TVm_{xp}, TVn_{xr})
incoming from said second and third exchanges **([0148] and Fig. 1, #110, #120, Fig.**
2A, #140. if the actual traffic load is different from the reserved capacity, First
exchange will allocate new capacity to each link. Note, distribution data
representative of the traffic is the same as capacity representative of the traffic,
see [0147]: measurement of the traffic ... 16, 12, 8 ... and 18, 12, 9 units in fact in
use).

38. As per claim 42. **Peleg and Duffield teach** (New) The system of claim 33,

39. **Peleg doesn't teaches** wherein said evaluation module is configured for
performing steps of incrementally generating traffic quantum representative of said

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traffic and producing a distribution of said traffic quantum in the absence of interference with operation of said communications network.

40. **Duffield teaches** wherein said evaluation module is configured for performing steps of incrementally generating traffic quantum representative of said traffic (**col. 3, line 44-51 and please refer to Fig. 11 (sampling subsystem): here the labels are the traffic quantum, because they both represent the incoming traffic. The label is also incrementally generated, since in line 46-47: generate a packet label for each sampled packet, so the more sampled packet coming in, the more labels will be generate**) and producing a distribution of said traffic quantum (**Fig. 5B: is producing a distribution of labels to represent traffic, note as above described traffic quantum is the same as labels**) in the absence of interference with operation of said communications network (**Fig. 11, the input buffer #1120 and sampling system #1130 are in different path thus no interference or delay**).

41. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Duffield's idea into Peleg talk about the measured traffic can be represent in a statistical way, and Duffield suggest producing a distribution of the traffic, the benefit is to give network engineering a clear picture when the traffic is heavy and what time is light, this help network engineering analysis the network.

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42. Claims 26, 36, 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peleg (US 2004/0042398) in view of Duffield (US 6873600) and further in view of Yip (7356584).

43. As per claim 26, **Peleg and Duffield teach** (New) The method of claim 25, comprising the steps of:

44. **Peleg teaches** ... otherwise selecting a next choice in said set of routing rules (**Fig.1, #100, select No in this situation, and go to #120, #130, furthermore, #120 and #130 are routing rules**).

45. **Peleg and Duffield do not teach** accepting said traffic quantum to be assigned to a given link only if the sum of all the traffic portions assigned to said link is smaller than said load limit set for said link.

46. **Yip teaches** accepting (**Fig. 4, #409 balancing the load and #415 accepting the load**) said traffic quantum to be assigned to a given link only if the sum of all the traffic portions assigned to said link is smaller than said load limit set for said link (**col. 3, line 14-18: local communication provider may be underutilized ... ISP increase the load to local providers. Note, First, local communication provider consider as a whole, thus all the links in and out of local communication provider is the sum**

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of all traffic. Second, traffic quantum smaller than load limit, which means underutilized.),

47. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Yip's idea into Peleg talk about the measured traffic can be represent in a statistical way, and Yip suggest assign more load to the links that are underutilized, the benefit is to use all the resource available. They are in the analogues art of network capacity or load balancing.

48. As per claim 36, **Peleg and Duffield teach** (New) The system of claim 33, comprising a routing rules generating module configured for:

49. **Peleg teaches** ...otherwise selecting a next choice in said set of routing rules (Fig.1, #100, select No in this situation, and go to #120, #130, furthermore, #120 and #130 are routing rules).

50. **Peleg and Duffield do not teach** accepting said traffic quantum to be assigned to a given link only if the sum of all the traffic portions assigned to said link is smaller than said load limit set for said link, ...

51. **Yip teaches** accepting (Fig. 4, #409 balancing the load and #415 accepting the load) said traffic quantum to be assigned to a given link only if the sum of all the

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traffic portions assigned to said link is smaller than said load limit set for said link(**col. 3, line 14-18: local communication provider may be underutilized ... ISP increase the load to local providers. Note, First, local communication provider consider as a whole, thus all the links in and out of local communication provider is the sum of all traffic. Second, traffic quantum smaller than load limit, which means underutilized.**),

52. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Yip's idea into Peleg talk about the measured traffic can be represent in a statistical way, and Yip suggest assign more load to the links that are underutilized, the benefit is to use all the resource available. They are in the analogues art of network capacity or load balancing.

53. As per claim 43. (New) **Duffield teaches** a communication network (**col. 1, line 45-50: packet switching network, local and wide area data network ..., are communication network**) including a plurality of exchanges (**the exchange can be each routers in Fig. 1, in a packets switching network**), comprising a system according to any one of claims 33-42 (**the following limitation was taught by claims 33-42**).

54. As per claim 44, (New) **Duffield teaches** a computer program product capable (**col. 8, line 14-16: digital signal processing chip must have program load into it in**

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order to run) of being loaded in the memory of at least one computer (**Fig. 1, #50 computer**) and including software code portions for performing the method of any one of claims 23-32 (**Fig. 1, #50 computer, measurement process in run on computer, and it is inherent, that computer has software running on it. the following limitation was taught by claims 23-32)** when the product is capable of being run on a computer (**Fig. 1, #50 computer, measurement process in run on computer**).

Allowable Subject Matter

55. Claims 39-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

b. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FAN NG whose telephone number is (571)270-3690. The examiner can normally be reached on Monday-Friday; 7:30am-5:30pm.

c. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571)272-3011. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

d. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

56.

57.

58. /F. N./

59. Examiner, Art Unit 4145

/Pankaj Kumar/

Supervisory Patent Examiner, Art Unit 4145